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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
GILLESPIE, BENJAMIN	
ART UNIT	PAPER NUMBER
1711	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/24/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/511,349	EUGENE ET AL.	
	Examiner	Art Unit	
	Benjamin J. Gillespie	1711	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 March 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *21-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *21-27 and 31-37* is/are rejected.

7)☒ Claim(s) *28-30* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *3/20/2007*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Claim Rejections - 35 USC § 102

The following is a quotation of 35 U.S.C. 102(b) which forms the basis for all anticipation rejections set forth in this Office action:

> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 21-27 and 31-32 rejected under 35 U.S.C. 102(e) as being anticipated by Clemens et al ('359). Patentee teaches a polyurethane composition comprising the reaction product of diisocyanate, polyester polyol, polyether polyol, terpene-phenolic resin, and amine terminating agent, all through the presence of solvent (Abstract, Col 6 lines 42-53, Col 4 lines 21-22, Example 37). Furthermore, Clemens et al teaches that the isocyanate reactive compounds are present relative to isocyanate containing compounds, wherein the ratio of NCO:OH is 1:1.1 to 1:2.5. In particular the polyether polyols have a molecular weight of at least 2000 g/mol and are primarily dihydroxy and/or trihydroxy (Col 7 lines 20-30, and Col 12 lines 41-43). Finally, Clemens et al teaches the terpene-phenolic resin to consist of NIREZ 2019, now available as SYLVARES TP 2019, which has a hydroxyl number range overlapping applicants' claimed range and the amine to react with the isocyanate-terminated polyurethane pre-polymer is disclosed to consist of a polyamine (Example 37, and Col 12 lines 48-50).

2. Regarding applicants' arguments, although Clemens et al does not explicitly disclose that the terpene-phenolic resin SYLVARES TP 2019 is reactive, this property resin is inherent through the presence of hydroxyls in the phenol groups.

3. Applicant's arguments filed 3/2/2007 have been fully considered but they are not persuasive. Applicants argue in conjunction with the affidavit filed October 10th, 2006 that the

polyurethane of Clemens et al merely incorporates the hydroxyl-functional terpene-phenolic resin by physical mixing and does not chemically react it into the polyurethane resin. Gilles Eisele's statement that prepolymer has "virtually no isocyanate left to react with NIREZ 2019" is vague and unconvincing. The examiner acknowledges the stoichiometric equivalents calculated by Gilles Eisele, however this calculation shows a greater amount of NCO groups than NCO reactive groups and therefore contradicts the assertions made by applicants that no terpene-phenolic reaction partner is present in the polyurethane.

4. By showing that free isocyanate groups are in fact present in the prepolymer resin one would have a reasonable expectation that the two functional groups (NCO and OH group from terpene-phenolic resin) would react, and furthermore applicant has not limited the claims to a certain reaction extent between the free isocyanate and terpene-phenolic resin. Finally, the method of example 37 shows mixing the isocyanate terminated prepolymer with the terpene-phenolic resin before introducing the EDA compound. The total amount of free NCO groups is actually greater than taught by Gilles Eisele when the terpene-phenolic resin is first introduced to the polyurethane prepolymer.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 21-27, 31-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clemens et al ('359) in view of Reid et al ('449). Aforementioned Clemens et al teaches a

polyurethane composition comprising the reaction product of diisocyanate, polyester polyol, polyether polyol, reactive terpene-phenolic resin, and amine terminating agent, but fails to teach a method wherein the pre-polymer formation includes the reaction of diisocyanate, polyester polyol, polyether polyol and a reactive terpene-phenolic resin. Reid et al teaches a polyurethane pre-polymer composition and method for production comprising the reaction product of diisocyanate, polyester and polyether polyol, and a reactive terpene-phenolic resin (Abstract, col 3 lines 55-57, col 4 lines 18, 29-32, 38-40, example 10). What's more, Reid et al teaches through the inclusion of the terpene-phenolic resin in the pre-polymer formation, not only does the resulting polyurethane have increased initial green strength, but also an extended the pot life and improved chemical and heat resistance when cured (Col 4 lines 20-27).

6. Therefore it would have been obvious to one skilled in the art at the time of the invention to include in the terpene-phenolic resin in the pre-polymer reaction of Clemens et al as taught by Reid et al, based on both compositions are analogous and the motivation to improve chemical and heat resistance of the polyurethane. With that understanding, Clemens et al goes on to teach the polyurethane composition dissolved in solvent, applied to a substrate to form a continuous film, and removal of the solvent by drying the composition (Col 5 lines 10-12, col 14 lines 29-32). Finally, Clemens et al teaches that the polyurethane, after applied to the substrate backing system, then acts as an adhesive and can be applied to another layer, therefore forming a laminate (Col 14 lines 51-57).

7. Applicant's arguments filed 3/2/2007 have been fully considered but they are not persuasive. Applicants argue that Clemens et al does not suggest the use of a polyurethane resin according to the claimed invention because there is no usage suggested in printing inks, however

these arguments are moot because the claims are not drawn to inks but instead a generic polyurethane resin (Claims 21-34), a coating comprising the polyurethane resin (Claim 35), and a laminate (Claims 36 and 37).

8. Furthermore, applicants argue that Reid et al lacks as a sufficient secondary teaching because patentees are silent with respect to the tackifying resin being reacted into the polyurethane backbone. Instead, applicants argue that there is a directing teaching away on column 8 lines 9 and 10, which states that free NCO groups are present in the prepolymer and therefore applicants conclude that if the terpene-phenolic resin was reactive then there would be no free NCO groups; this conclusion is incorrect.

9. Reid et al teaches to react the terpene-phenolic resin into the polyurethane resin on column 3 lines 47-54 as well as in examples 10-20, wherein the polyurethane prepolymer is the reaction product of polyol, diisocyanate and the reactive terpene-phenolic resin. Regarding the NCO content of column 8 lines 9 and 10, this NCO content is directed towards the isocyanate-terminated polyurethane prepolymer, which are uncured and therefore contain free NCO groups, otherwise the polyurethane would constitute a cured polymer.

Response to Arguments

10. Finally, applicants request clarification regarding the rejections made under 102(b) and 103(a) with respect to Clemens et al. Applicants state that in response to the obvious rejection, "the examiner admits that no reaction of diisocyanate, polyester polyol, polyether polyol and reactive terpene-phenolic resin was taught by Clemens". Claims 21-27 and 31-32 are directed a generic polyurethane comprising polyether polyol, terpene-phenolic resin, diisocyanate, and amine, regardless of reaction sequence. As previously discussed, Clemens et al teach a

polyurethane comprising the reaction product of polyether polyol and diisocyanate based prepolymer, with terpene-phenolic resin, and amine.

11. Claims 33-37 are limited to the terpene-phenolic resin being included in the prepolymer reaction, i.e. the reaction only between the polyether polyol, and diisocyanate, which is not anticipated by Clemens et al. No inconsistencies are present because applicants have not limited claims 21-27 and 31-33 to consist of a reaction between only polyether polyol, reactive terpene-phenolic resin, and diisocyanate.

12. Applicant's amendments, filed 3/2/2007, with respect to the rejections of claims 21-37 under U.S.C. 112 2nd paragraph have been fully considered and are persuasive. The rejection of claims 21-37 under U.S.C. 112 2nd paragraph have been withdrawn.

Claim Objections

13. Claims 28-30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin J. Gillespie whose telephone number is 571-272-2472. The examiner can normally be reached on 8am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on 571-272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

B. Gillespie

RABON SERGENT
PRIMARY EXAMINER